AN ORDINANCE THAT REPEALS EXISTING CHAPTER 70, ARTICLE X, OF THE DURHAM CITY CODE ("STORMWATER PERFORMANCE STANDARDS FOR NEW DEVELOPMENT"), ITS INTERNAL DIVISIONS AND SECTIONS 70-736 THROUGH 70-740 AND REPLACES IT WITH A NEW ARTICLE X ENTITLED "STORMWATER PERFORMANCE STANDARDS FOR DEVELOPMENT" CONTAINING NEW SECTIONS 70-736 THROUGH 70-741

WHEREAS the City Council of the City of Durham finds that:

The health, safety and general welfare and convenience of the public will be furthered through:

1) Protecting receiving waters impacted by stormwater runoff discharged from development within the City of Durham
2) Complying with the City of Durham's municipal stormwater National Pollutant Discharge Elimination System permit, issued under the authority of Section 402(p) of the Clean Water Act and implementing regulations at 40 CFR Part 122.26.
3) Complying with Article 4A 113A-71 and 113A-72 of North Carolina General Statutes.
4) Controlling pollutant loads in stormwater runoff from development projects by establishing performance standards for total suspended solids and nitrogen, by protecting buffers and by managing peak flows that cause or contribute to stream erosion.

NOW, THEREFORE, BE IT ORDAINED, by the City Council of the City of Durham that:

Section 1. Article X of Chapter 70 of the Durham City Code is retitled "Article X. Stormwater Performance Standards for Development."

Section 2. Existing Divisions 1 and 2 including the titles of such divisions are eliminated. Sections 70-720 through 70-735 shall precede the new sections adopted in this Ordinance, and Sections 70-742 through 70-749 shall be placed at the end of the new sections adopted in this Ordinance, and both shall be designated as "Reserved."

Section 3. Existing Sections 70-736 through 70-740 are repealed and replaced with the following new sections:

Sec. 70-736. Purpose, definitions, and applicability.

(a) *Purpose*. The purpose of Article X is to further the health, safety and general welfare and convenience of the public through:

(1) Protecting receiving waters in the Neuse River Basin and Cape Fear River Basin impacted by stormwater runoff discharged from development within the City of Durham

(2) Complying with the City of Durham's municipal stormwater National Pollutant Discharge Elimination System permit, issued under the authority of Section 402(p) of the Clean Water Act and implementing regulations at 40 CFR Part 122.26.

(3) Complying with Article 4A 113A-71 and 113A-72 of North Carolina General Statutes.

(4) Continuing the City's compliance with Neuse River Basin nutrient sensitive waters management strategy, 15A NCAC 02B.0235 *et seq.*

(5) Controlling pollutant loads in stormwater runoff from development by establishing performance standards for total suspended solids and nitrogen, by protecting buffers, and by managing peak flows that cause or contribute to stream erosion.

(6)Reducing the impact on downstream properties of peak runoff from land disturbing activities.

(b) *Definitions*. For the purposes of this Article, the terms and phrases below shall be defined as follows.

Best management practice or BMP means stormwater and runoff pollution control devices or practices designed to reduce the amount of flow, pollutants, or nutrients contained in discharges to the stormwater conveyance system and receiving waters, which meet standards set by the City of Durham Engineering and Stormwater Division.

Cape Fear River Basin means land that drains to the Cape Fear River as determined by the Durham Planning Department and as shown on a map that shall be maintained by the Durham Planning Department.

Common Plan of Development means construction or land disturbance in which stages, phases, or individual activities are coordinated. It may be identified through indicia such as signs, notices, advertising, loan applications, drawing, plats, blueprints, marketing plans or sales pitch, contracts, permit applications, zoning request, or computer design; or physical demarcation including but not limited to boundary signs, lot stakes, or surveyor markings indicating that construction activities may occur on a specific plot. It can include one or more owners and/or operators.

Development means any land disturbance that requires site plan or subdivision approval or similar approvals from the Durham City-County Planning Department. Development shall not include agriculture, mining or forestry activities.

Director of Public Works means the Director of the Public Works Department or designee.

Effective Date for Nitrogen Control, or Effective Date means March 9, 2001 for land in the Neuse River Basin, and March 17, 2009 for land in the Cape Fear Basin.

Land Disturbance means a change in the topography of land, and includes but is not limited to grubbing, stump removal, removal of topsoil, coarse or fine grading, and disturbance to the subgrade.

Low Density Project means development that has less than 24% impervious area and provides for the use of vegetated conveyances to the maximum extent practicable. Piped stormwater flow in Low Density Projects is limited to road crossings and driveway access.

Neuse River Basin means land that drains to the Neuse River as determined by the Durham Planning Department and as shown on a map that shall be maintained by the Durham Planning Department.

(c) *Applicability, Implementation, and Coordination with other ordinances.*.

(1) The requirements of Section 70-737 (Pollutant and Nutrient Control Requirements) shall apply to all development in which an application for subdivision or site plan approval, or similar plan approval, is made to the Durham City-County Planning Department on or after the respective Effective Dates for Nitrogen Control in the Neuse River and Cape Fear River Basins where the development consists of: ; or are

a. single-family detached, duplex, park, or recreational development that will result in land disturbance of greater than one acre; or

b. other residential (including multifamily and townhomes), office, industrial, institutional, and commercial development that will result in land disturbance of greater than one-half acre; or

c. projects that are part of a common plan of development that cumulatively exceed the above thresholds.

(2) Compliance with this Article shall be demonstrated upon submittal of an application after the Effective Date for subdivision, site plan, or similar plan approval, and, in addition, with respect to Section 70-738, upon applications for building permits or other permits necessary for land disturbance regulated under such section.

(3) Where these requirements conflict with or differ from other regulatory requirements including, but not limited to, the Unified Development Ordinance for the City of Durham, the stricter of the requirements shall control.

(4) Development plans proposed for rezonings in the City of Durham shall include, at a minimum, conceptual information ensuring compliance with these Stormwater Performance Standards.

Sec. 70-737. Pollutant and Nutrient control requirements.

(a) *Suspended Solids Control Requirement Where Impervious Area is Less than 24%.*

(1) Development described in Sec. 70-736(c)(1) that is less than 24% impervious and does not qualify as Low Density, including projects that discharge to existing stormwater systems, shall provide treatment of all stormwater runoff from impervious surfaces conveyed in non-vegetated conveyances with such treatment designed to treat runoff from the first 1-inch of rainfall to remove eighty-five percent (85%) Total Suspended Solids. Non-vegetated conveyances do not include piping to achieve road or driveway crossings.

(2) For impervious areas that cannot be reasonably treated such as non-NCDOT offsite transportation improvements or small areas at the edge of the site, overtreatment of onsite

areas and/or treatment of runon from offsite right-of-way areas can be provided for 85% Total Suspended Solid removal for an equivalent impervious area, in accordance with guidelines approved by the Director of Public Works.

(b) *Suspended Solids Control Requirement Where Impervious Area is 24 to 37%*. Development described in Sec. 70-736(c)(1) that is between 24% and 37% impervious shall provide treatment of all stormwater runoff from impervious surfaces from the first 1-inch of rainfall to remove eighty-five percent (85%) Total Suspended Solids. Impervious areas for which treatment cannot be reasonably provided as described in (a)(2) above may treat an equivalent area as therein described.

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(c) *Nitrogen Control Requirement* - Compliance with the State of North Carolina and City of Durham standards. Development described in Sec. 70-736(c)(1) with the Neuse and Cape Fear River Basins that is greater than 24% impervious must achieve a nitrogen export limit as defined in State regulation 15A NCAC 02B.0235(4)(a)(i).

Commentary: Note that there is no provision in the State regulation for offset payments in the Cape Fear River Basin and therefore none will be accepted. For projects greater than 37% impervious, projects are required to meet nitrogen control requirements that are more stringent, and that will implicitly control suspended solids as a by-product of nitrogen control; project applicants do not need to provide calculations for suspended solids removal.

(1) *Neuse Offset Payment.* Development within the Neuse River Basin shall have the option of partially offsetting nitrogen loads as allowed by State regulation (currently 15A NCAC 02B.0235), with payment of a nutrient offset payment calculated under State requirements (currently 15A NCAC 02B.0240). Nutrient offset payments cannot be used in combination with non-contiguous land bank parcels within the Neuse Basin.

(2) *Land Bank Donor Option.* Development within the Neuse and Cape Fear Basin shall have the option of the inclusion of non-contiguous Land Bank "donor" parcels on the site plan for the purpose of reducing nitrogen load. Nitrogen loading can be reduced by the addition of one or more parcels ("donor parcels") that are not contiguous to the developing parcels ("receiving parcels") which can be utilized in the reduction of nitrogen loading subject to the following provisions:

a. Meet minimum onsite treatment requirements for nitrogen reduction. The percent of onsite required nitrogen reduction from the post development loading shall be met in accordance with Table 1 below:

Table 1

Receiving Parcel Post Construction Impervious and/or Nitrogen Loading	**Minimum Percent of Nitrogen Loading Reduction Required Onsite. *** (Reduction is from Post Construction Nitrogen Loading)	**Notes**
1. Produces ≥ 4.68 lbs/ac/yr unit nitrogen loading	30% onsite	See Exceptions 1., 2., and 3. Below.
2. Produces < 4.68 lbs/ac/yr unit nitrogen loading	100% onsite	*Commentary: A 30% reduction to 4.68 lbs/ac/yr is 3.6 lbs/ac/yr, the required unit nitrogen loading. All reduction of Nitrogen loading must be done through onsite methods.*
Exceptions:		
Receiving Parcel Post Construction Impervious and/or Nitrogen Loading	**Minimum Percent of Nitrogen Loading Reduction Required Onsite. *** (Reduction is from Post Construction Nitrogen Loading)	**Notes**
1. ≥ 90% Impervious And Project is located in the Compact Neighborhood, Downtown or Suburban Transit development tier found in the latest version of the Durham Comprehensive Plan.	0% onsite	

2. Produces > 4.68 lbs/ac/yr unit nitrogen loading And Is >70% impervious and < 90% impervious And Project is located in the Compact Neighborhood, Downtown or Suburban Transit development tier found in the latest version of the Durham Comprehensive Plan.	15% onsite	
3. Projects using the Alternative Nitrogen Control	Projects using the Alternative Nitrogen Control must provide onsite treatment in accordance with 70-737(d)(3) and (4)	

* Minimum onsite treatment requirements do not necessarily address all required reduction requirements. See Section 70-737 (c).

b. *Location of parcel.* Both parcels must be in the same River Basin and the Land Bank "donor parcel" shall be located in the same water supply watershed overlay or a more protected water supply overlay as the receiving parcel.

Commentary: For example, A zone can donate to A or B zone or non water supply areas, B zone can donate to B zone or non water supply and non water supply can donate only to non water supply.

c. *Protection of Donor Parcel(s).* The portion of the Land Bank donor parcel which is restricted from development shall remain in a vegetated or natural state. It shall be protected from all future development through the use of a permanent conservation easement approved by the City of Durham in favor of either the City of Durham or Durham County or a land trust or similar conservation-oriented non-profit organization with the legal authority to accept such easements. The organization shall be bona fide and in perpetual existence and the conveyance instruments shall contain an appropriate provision for the retransfer to the City of Durham or Durham County in the event the organization becomes unable to carry out its functions. If the entity accepting the easement is not the City of Durham or Durham County, then a third party right of enforcement favoring the City or County, as appropriate, shall be included in the easement.

d. *Calculations.* The nitrogen load reduction calculations shall be reviewed and approved by the Director of Public Works as part of the Site Plan Review process.

e. *Approval.* The Land Bank donor parcel including its size and number must be approved and accepted by the Director of Public Works and, if appropriate, Durham County. The parcel must be within areas identified by the City of Durham as beneficial to water quality and shall not be currently in use to provide for nutrient reduction. Thereafter it may not be used for any future development calculations. (*No double counting*)

f. *Legal description.* The Land Bank donor parcel shall have a legal description that meets the requirements of the guidelines established by the Director or Public Works.

g. *Excluded lands.* A Land Bank donor parcel may only donate land that is outside a designated Floodway, non-encroachment area or 50 foot stream buffer.

h. *Additional credits.* Property located outside of a 100 ft stream buffer may be used as a donor parcel at a rate of 120% of the property area used for the nitrogen reduction calculations.

(3) *Nutrient Banks.* Projects that meet minimum onsite treatment requirements in Table 1 above may also use approved Nutrient Banks to reduce nitrogen load in accordance with City policy as approved by the Director of Public Works and any applicable state requirements.

(4) *Inclusion of Streets.* Loading calculations shall include increases in nitrogen load from increases in impervious surfaces associated with any required offsite improvements to City streets.

(d) *Alternate nitrogen control standard for development with preexisting impervious area in the Neuse and Cape Fear River Basins*

(1) This option is available for other residential, office, industrial, institutional, or commercial development described in Sec. 70-736(c)(1) that contains at least 60% impervious area which preexisted the respective Effective Date for Nitrogen Control in each basin. Such development shall be deemed to meet nitrogen control requirements if nitrogen load is reduced by 40-percent from the nitrogen load that existed on the Effective Date. On-site treatment must be utilized for increases in impervious area over the area that existed on the Effective Date. Treatment for the preexisting impervious area may be provided through a combination of on-site treatment and Land Bank and Nutrient Banks options as further described in paragraphs (3) and (4) below. Impervious surface shall be considered as preexisting if such area was constructed in accordance with a site plan or similar plan approved on or before the Effective Date and was not subsequently removed, or if aerial photography from the Effective Date or years preceding the Effective Date or other documentation deemed acceptable by the Director of Public Works shows such impervious area.

(2) Sites that have a valid demolition site plan may count in their impervious area impervious surfaces that existed on the Effective Date but were removed since that time if the demolition site plan has not expired as of the time of application.

(3) Development qualifying under (1) and (2) above with a preexisting impervious area of 90% or more may use options for noncontiguous land bank donor parcels or Nutrient Banks described in Section 70-737(c) to meet all or a portion of the nitrogen reduction requirement for their preexisting impervious area.

(4) Development qualifying under (1) and (2) above with a preexisting impervious area of 60% to 90% must provide onsite treatment equal to the inverse proportion of the preexisting impervious percentage of the development. The remaining treatment may be achieved through options for noncontiguous land bank donor parcels or Nutrient Banks described in Section 70-737(c). (*Example: Development with 80% preexisting impervious area and no increase in impervious area from Effective Date must provide nitrogen reduction of 20% of the preexisting load on site, and may use Section 70-737(c) options for remainder of treatment.)*

(e) *Exemption for Low Density Projects*. Low Density Projects are exempt from the requirements of Sec 70-737(a) through (e) above. However, requirements under the City of Durham UDO still apply.

(f) *Procedures*. Pollutant loading calculations shall be made using procedures approved by the Director of Public Works. Approved methodologies for calculating pollutant loading may be obtained from the Public Works Department.

(g) *Time of submission*. The applicant shall submit pollutant loading calculations for the pre- and post-development conditions and demonstrate compliance with this section prior to the approval of a subdivision or site plan of any type, as part of plan submission.

(h) *Approved BMPs*. The BMPs that may be used to reduce pollutants in stormwater runoff include, but are not limited to, the following: wet detention ponds, constructed wetlands, open channel practices (water quality swales), riparian buffers, vegetated filter strips with level spreader, bioretention cells, cisterns, and sand filters. The BMP pollutant removal calculations shall be as approved by the Director of Public Works.

Sec. 70-738. Peak runoff control requirements.

(a) *Purpose.* Properties and waterways downstream from development may be adversely impacted from increases in volume, velocity; and peak flow rates caused by such development. Any project may be required to provide BMPs or make other improvements to the existing drainage system to address water quantity concerns, water quality concerns, or both if the proposed development will increase potential flood damages to existing properties or significantly increase pollutant levels in downstream receiving waters. In particular,

(1) *One Year Storm.* Development that falls within the applicability requirements of Sec 70-736(c)(1) above may not increase the post-development peak runoff rate from the one-year storm over the pre-development peak runoff rate by more than ten percent. If the post-development peak runoff rate does increase by more than ten percent, stormwater management facilities shall be provided such that there is no net increase.

(2) *Two and Ten Year Storms.* Land disturbance that increases the peak runoff rate from either the 2-year or the 10-year storm may be required to install BMPs to address the impact, as determined in accordance with standards of the City's Engineering and Stormwater Division.

(b) *Calculations.* The peak flow calculations shall be made using procedures in the City of Durham Reference Guide for Development.

(c) *Time of submission; stormwater impact analysis*. The applicant shall submit peak flow calculations for the pre- and post-development conditions as part of plan submission and application for a subdivision or site plan of any type or application for a building permit for any structure other than a single family residence or an allowed accessory building for such residence. Site plans or other similar plans for increases in impervious area of less than 200 square feet, calculated cumulatively from the Effective Date, are excluded from this requirement. Where such calculations show an increase in peak runoff rate from the 2 or 10 year storm a stormwater impact analysis for downstream properties and structures that complies with standards of the Engineering and Stormwater Services Division shall also be submitted and approved prior to plan approval.

Sec. 70-739. BMP Design.

Structural BMPs that fall under the jurisdiction of North Carolina Department of Environmental Resources Division of Land Resources shall be designed in accordance with North Carolina Dam Safety Laws which shall include NCGS 143-215.23-37, the latest version and all associated administrative code. Structural BMPs that are exempted from the North Carolina Dam Safety Laws and all other proposed structural BMPs shall be designed in accordance with the City of Durham Reference Guide for Development. Existing ponds that are proposed to remain within the proposed site shall be brought into compliance with all applicable City of Durham Reference Guide for Development and the North Carolina Dam Safety Laws. These existing ponds shall be considered structural BMPs.

Sec. 70-740. BMP Maintenance.

All structural BMPs shall be maintained in compliance with City of Durham maintenance protocols, policies, procedures, and requirements as outlined in the latest version of the City of Durham's "Owner's Maintenance Guide for Stormwater BMPs Constructed in the City of Durham."

Sec. 70-741. Buffer Requirements.

(a) *Buffer.* Subdivision and site plans of all types shall show 50-foot wide riparian buffers directly adjacent to surface waters (perennial and intermittent streams, lakes, ponds and estuaries) in the Neuse River Basin. For the purpose of this section, a surface water shall be present if the feature is shown on either the most recent United States Geological Survey 7 1/2 minute quadrangle topographic maps or the most recent United States Department of Agriculture Soil Survey of Durham County, North Carolina.

(b) *Calculation next to streams.* For intermittent and perennial streams, the buffer shall begin at the most landward limit of the top of bank and extend landward on all sides of the surface water, measured horizontally on a line perpendicular to the surface water.

(c) *Calculation next to other waters.* For ponds, lakes, and estuaries, the buffer shall begin at the most landward limit of the normal water level and extend landward, measured horizontally on a line perpendicular to the surface water.

(d) *No impact/determination.* Applicants shall demonstrate as part of site plan or plat submission that the development does not impact the Neuse buffer or that the North Carolina Division of Water Quality has approved the activity that impacts the Neuse buffer.

(e) *Relief.* Relief from buffer requirements in the Neuse River Basin may be allowed when surface waters are not present in accordance with the provisions of 15A NCAC 02B.0233(3)(a) as determined by the North Carolina Department of Environment and Natural Resources (NCDENR). The City Public Works Director, County Engineer, or designees, as appropriate, may allow relief from buffer requirements outside the Neuse River Basin pursuant to the applicable City or County standards and procedures.

This Ordinance shall be effective March 17, 2009.